DEALING WITH "LATEX ALLERGIES" AT WORK



About WorkSafeBC

WorkSafeBC (the Workers' Compensation Board) is an independent provincial statutory agency governed by a Board of Directors. It is funded by insurance premiums paid by registered employers and by investment returns. In administering the *Workers Compensation Act*, WorkSafeBC remains separate and distinct from government; however, it is accountable to the public through government in its role of protecting and maintaining the overall well-being of the workers' compensation system.

WorkSafeBC was born out of a compromise between B.C.'s workers and employers in 1917 where workers gave up the right to sue their employers or fellow workers for injuries on the job in return for a no-fault insurance program fully paid for by employers. WorkSafeBC is committed to a safe and healthy workplace, and to providing return-to-work rehabilitation and legislated compensation benefits to workers injured as a result of their employment.

WorkSafeBC Prevention Information Line

The WorkSafeBC Prevention Information Line can answer your questions about workplace health and safety, worker and employer responsibilities, and reporting a workplace accident or incident. The Prevention Information Line accepts anonymous calls.

Phone 604 276-3100 in the Lower Mainland, or call 1 888 621-7233 (621-SAFE) toll-free in British Columbia.

To report after-hours and weekend accidents and emergencies, call 604 273-7711 in the Lower Mainland, or call 1 866 922-4357 (WCB-HELP) toll-free in British Columbia.

Acknowledgments

This booklet would not have been possible without the generous assistance of the many people and organizations who are concerned about preventing "latex allergies." In particular, WorkSafeBC would like to thank the representatives from the many organizations—health associations, government ministries, universities, and hospitals—who reviewed the draft of this booklet and contributed valuable comments and information.

To all who participated in this project, our many thanks.

DEALING WITH "LATEX ALLERGIES" AT WORK



WorkSafeBC Publications

Many publications are available on the WorkSafeBC web site. The Occupational Health and Safety Regulation and associated policies and guidelines, as well as excerpts and summaries of the *Workers Compensation Act*, are also available on the web site: <www.worksafebc.com>

Some publications are also available for purchase in print:

Phone: 604 232-9704
Toll-free phone: 1 866 319-9704
Fax: 604 232-9703
Toll-free fax: 1 888 232-9714

Online ordering: <www.worksafebc.com> and click on Publications;

follow the links for ordering

© 1997, 2004, 2005 Workers' Compensation Board of British Columbia. All rights reserved. The Workers' Compensation Board of B.C. encourages the copying, reproduction, and distribution of this document to promote health and safety in the workplace, provided that the Workers' Compensation Board of B.C. is acknowledged. However, no part of this publication may be copied, reproduced, or distributed for profit or other commercial enterprise, nor may any part be incorporated into any other publication, without written permission of the Workers' Compensation Board of B.C.

2005 edition

Library and Archives Canada Cataloguing in Publication Data

Main entry under title:

Dealing with "latex allergies" at work. -- [1997 ed.] -

Irregular.

"WorkSafeBC."--Cover.

ISSN 1718-0767 = Dealing with latex allergies at work

1. Latex - Allergy. 2. Latex, Synthetic -

Allergenicity. 3. Industrial hygiene - British Columbia.

- I. Workers' Compensation Board of British Columbia.
- II. Title: Dealing with latex allergies at work.

RC598.L3D42 616.97'305 C2005-960252-X

Introduction

"Latex allergies" is often used as a "catch-all" term to describe various health problems associated with the use of rubber products.

In particular, rubber-related health problems such as skin rashes and allergies have been noted in health care workers. Such problems may be related to the increased use of rubber gloves for protection against infectious diseases such as hepatitis and AIDS.

Workers in emergency services, janitorial work, housekeeping, hairdressing, and food services—and other workers who wear rubber gloves or other rubber products—may also be at risk of developing these health problems.

This booklet has three parts. The *first* part explains the health problems that *may* be caused by using such products. The *second* part focuses on the natural rubber latex protein allergy, which may cause severe health problems—it is essential to understand the risk factors for this allergy, how to prevent it from developing and what to do if it does develop. The *third* part lists other sources of information on "latex allergies."

The information in this booklet applies to a wide range of jobs with exposure to rubber products.

Contents

Overview of rubber products and "latex allergies"	1
What is rubber?	
What health problems are associated with rubber products?.	2
Summary of allergic reactions	4
What should I do if I have a health problem	
that may be related to rubber products?	5
Natural rubber latex protein allergy	6
How am I exposed to natural rubber latex proteins?	6
Who may be at risk of developing a natural rubber latex protein allergy?	7
How can the risk of developing a natural rubber latex protein allergy be minimized?	
What MAY contain natural rubber latex?	
What if I must wear personal protective equipment like gloves?	
How do I know if I am allergic to natural rubber latex proteins?	13
Is there a cure for the natural rubber latex protein allergy?	13
What can I do if I have a natural rubber	10
latex protein allergy?	
"Latex allergies" resources	15

Overview of rubber products and "latex allergies"

What is rubber?

"Rubber" is a flexible, elastic substance made from either:

- Sap collected from rubber trees (natural rubber latex)
- Various artificial mixtures (synthetic rubber)

Natural rubber latex contains complex compounds (proteins) that may cause specific health problems. Chemicals added to the natural rubber latex during processing may also cause skin problems. Health problems caused by the proteins and chemicals are covered later.

Synthetic (artificial) rubber does *not* contain any natural rubber latex proteins. Common synthetic rubbers are butyl (isobutylene), neoprene (polychloroprene) and nitrile (acrylonitrile butadiene) rubber. Synthetic rubber does, however, contain some of the same chemicals that are added to natural rubber latex during processing. Therefore, some workers who have skin problems when in contact with latex rubber *may* have the same problem when in contact with synthetic rubber.

The words "latex" and "rubber" are often used interchangeably and do *not* always mean natural rubber latex. For example, latex paints and caulkings are usually synthetic products that do not contain natural rubber latex and its proteins. It is impossible to tell by looking at a rubber product if it is made from natural rubber latex or synthetic rubber. A list of products found at work and home that *may* contain natural rubber latex is provided on page 11.

Sensitization: How do you become allergic?

To develop an allergy to something (e.g., chemical additives or natural rubber latex proteins), you must have been exposed to the substance at least once previously. Your body then develops an immune response, and you become sensitized to it. You probably will not be aware of this at the time you become "sensitized." You can have an allergic reaction following any subsequent exposure to the substance.

What health problems are associated with rubber products?

Not everyone who uses rubber products will develop health problems. Health problems that do occur are grouped into two types of reactions—irritant (non-allergic) reactions and allergic reactions (it is possible to have more than one of these health problems).

Irritant reactions

Irritant contact dermatitis is a skin rash that results from direct damage to the skin—it is *not* an allergic reaction. It is the **most common** health problem associated with products like gloves made of *either* natural rubber latex or synthetic rubber. Factors that *may* lead to this type of dermatitis include:

- Irritants such as residual soaps, detergents, hand creams, cleaning materials, disinfectants, and other chemical agents left on the skin are trapped under the gloves, causing skin irritation.
- Prolonged dampness from sweating in gloves softens the skin, making skin vulnerable to chafing and rubbing by the gloves.
- Powders inside some gloves (used to make them easier to put on and remove) may adsorb skin oils, drying the skin and causing irritation.

Repetitive hand washing may also cause the skin to become dry and irritated, as can using alcohol-based solutions and rough paper towels.

Allergic reactions

Rubber products may cause over-reactions by the body's defence (immune) system, called *hypersensitivity* or allergic reactions. These reactions are much **less common** than the irritant reaction mentioned previously, and are caused by substances called antigens. Animal dander, house dust, and pollens are examples of well-known antigens that cause allergic conditions. A common allergic condition is hay fever.

Two types of hypersensitivity reaction are associated with rubber products:

Rubber chemical allergy

Allergic contact dermatitis is a skin rash caused by the body's immune response to the *chemicals* added during the processing and manufacturing of BOTH *natural* rubber latex and *synthetic* rubber. This condition is **more common** than the natural rubber latex protein allergy discussed as follows.

• Natural rubber latex protein allergy

This allergic reaction is associated ONLY with *natural* rubber latex products. It is caused by the body's immune response to *protein(s)* in the natural rubber latex itself. Several symptoms may occur including:

- Hives
- Red, watery, itchy eyes
- Runny nose, sneezing
- Asthma (wheezing and shortness of breath)

In extreme cases, some people may suffer a potentially severe allergic reaction known as *anaphylaxis*. This reaction occurs within minutes of exposure to proteins in natural rubber latex, and is recognized by the appearance of severe breathing difficulties and falling blood pressure. Left untreated, this reaction may result in death. Anaphylaxis is a medical emergency that requires immediate treatment by a qualified person.

Those who are susceptible to this reaction may be advised by their doctors to wear a Medic-Alert bracelet and carry an allergy kit (e.g., Epipen®, Ana-kit®) with them at all times. The kit contains medication that will ease their condition during anaphylaxis until they can be treated by emergency medical personnel.



Summary of allergic reactions

	TYPE OF ALLERGY	
Characteristics	Rubber chemical allergy (allergic contact dermatitis)	Natural rubber latex protein allergy
Cause	Allergic reaction to chemical additives in natural rubber latex or synthetic rubber.	Allergic reaction to protein(s) only in natural rubber.
Route of exposure	Skin contact.	Skin contact. Mucous membrane contact. Inhalation.
Once sensitized, time to onset of symptoms after exposure	Anywhere from six hours to five days.	Usually immediate, anywhere from a few minutes up to one hour.
Symptoms	Skin rash only.	Possible swelling of eyelids/lips/face; watery, itchy eyes; runny nose; sneezing, coughing; wheezing; chest tightness; shortness of breath; hives; skin rash; rapid heart rate; low blood pressure.
Life threatening?	No.	Yes—potential anaphylaxis.

What should I do if I have a health problem that may be related to rubber products?

If you suspect you suffer from symptoms (for example, skin problems or hives) that may be related to rubber products, seek medical attention for assessment, diagnosis, and treatment. Your doctor may refer you to a skin specialist (dermatologist) or an allergy specialist who may conduct tests to determine if a rubber chemical or natural rubber latex protein allergy exists.

If you and your doctor think the problem is work-related, report your condition to your supervisor or employer as soon as possible. The person receiving your report must investigate your concerns and ensure any necessary corrective action is taken immediately.

Natural rubber latex protein allergy

Because the natural rubber latex protein allergy may be life-threatening, it is covered here in more detail.

How am I exposed to natural rubber latex proteins?

You may be exposed to natural rubber latex proteins at or away from work by:

Direct contact with a natural rubber latex product

- If you wear gloves containing natural rubber latex, your skin is in direct contact.
- If your dentist uses a natural rubber latex dental dam in your mouth, your mucous membranes are in direct contact with the dam.
- If you use contraceptive barriers such as condoms, diaphragms and cervical caps that may contain natural rubber latex, you are in direct contact.

Contact with airborne natural rubber latex proteins

Natural rubber latex proteins can bind onto the powder used inside some natural rubber latex gloves. When the gloves are put on and removed, the powder can become airborne. Airborne powder carrying the proteins may be a major cause of natural rubber latex sensitization. The powder may also cause allergic symptoms if it contacts the eyes and other mucous membranes. In addition, airborne powder can be inhaled not only by the glove wearer, but also by others in the area, and cause respiratory symptoms such as wheezing or shortness of breath.

Glove powder may stay airborne for a while, or it may settle and contaminate clothing and work surfaces.

Who may be at risk of developing a natural rubber latex protein allergy?

People who have, or have had, repeated exposure to natural rubber latex products may be at higher risk of developing a natural rubber latex protein allergy than those who don't have repeated exposures. Workers who are regularly exposed to natural rubber latex products and in whom health problems have been reported, include:

- Health care workers such as doctors, nurses, dentists, dental
 hygienists, lab technicians, etc. (mostly through the use of natural
 rubber latex gloves)
- Workers who process and manufacture natural rubber latex products

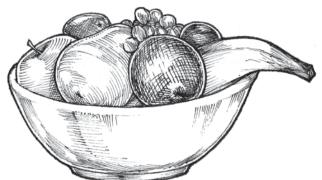
Other occupational users of natural rubber latex products (particularly gloves) include:

- Ambulance attendants, firefighters, police officers, and first aid attendants
- Housecleaning, janitorial, hairdressing, and food service workers
- Other workers who wear natural rubber latex gloves for protection



Others at risk of developing a natural rubber latex protein allergy include:

- People who have had multiple surgeries, childbirths or medical procedures, or frequent exposure to natural rubber latex medical products
- People who have active skin problems (such as *irritant* or *allergic contact dermatitis*)
- People with allergic conditions (like eczema, hay fever, and asthma)
- People with certain food allergies (for example, bananas, avocados, chestnuts, kiwi fruits)



How can the risk of developing a natural rubber latex protein allergy be minimized?

If you are considered at risk of developing a natural rubber latex protein allergy, eliminate your exposure to natural rubber latex products where possible. Since many medical and consumer products contain components made of natural rubber latex, completely avoiding these products is difficult. Failing elimination, minimizing exposure to latex materials, including powder from natural rubber latex gloves, is also thought to reduce the risk of developing this allergy.

Elimination

The most effective method to minimize exposure is to eliminate unnecessary use of natural rubber latex products. For example, some workers use natural rubber latex gloves when there is currently no need to even wear gloves.

This may be the case in the food service industry where workers may wear gloves due to concerns about contaminating food. Practicing good personal hygiene—that includes appropriate hand washing—will help prevent food contamination by workers. (In the future, food service

workers may not be allowed to contact "ready-to-eat" foods—i.e., foods that do not need further cooking before being eaten—with their bare hands. In this case, utensils and trays can be used to directly handle food and eliminate the need to wear gloves.)

Substitution

Where it is impossible to eliminate the use of a particular item, substitute the natural rubber latex product with another appropriate one that does not contain natural rubber latex. If there is no such suitable or available substitute, use a product (i.e., gloves) that contains as little natural rubber latex (i.e., low protein) as possible. Also choose low-protein natural rubber latex gloves that are powderless. For more information on substitution products, contact product manufacturers and suppliers.

Minimizing exposure

If natural rubber latex products must be used, only use them when absolutely necessary and for as short a time as possible. Always wash your hands as soon as possible after wearing natural rubber latex gloves, to remove the natural rubber latex proteins. It may also be possible to wear an underglove that is free of natural rubber latex. This will minimize exposure by direct skin contact.

Engineering controls

Install effective ventilation in work areas to decrease airborne natural rubber latex proteins. This may be feasible in some industrial applications such as natural rubber latex manufacturing.

Administrative controls

These may include:

Purchasing policies. Where possible, avoid purchasing natural rubber latex products. If natural rubber latex products are necessary, obtain information from manufacturers on the protein content of their products and choose one (i.e., gloves) with a low protein content. Powderless natural rubber latex gloves are also available. Consult the resource list at the end of this booklet.

- Work procedures. Develop and follow work procedures that eliminate or minimize the use of natural rubber latex products. If powdered natural rubber latex gloves are worn, workers should remove them from their hands without flicking or snapping them. Snapping gloves releases glove powder carrying natural rubber latex proteins into the air.
- Education and training. Workers exposed to natural rubber latex products need to know which products contain natural rubber latex and what health problems are associated with the products, especially the natural rubber latex protein allergy. To reduce the risk of developing this allergy, workers should be trained in work procedures that reduce their exposure to natural rubber latex. Workers should be instructed to report any health problems that may be related to natural rubber latex to their employer.

What MAY contain natural rubber latex?

In health care

gloves, surgical and examination ventilator circuits blood pressure cuff tubing bulb syringes catheters, diapers cannulas dental dams dressings tourniquet tubing

elastic wrap tourniquet tubing endotracheal tubes G-tubes, buttons

ambu bags tapes

IV access jobst spandex products

medication vial stoppers OR masks, hats oxygen masks Penrose drains reflex hammers resuscitators stethoscope tubing suction tubing

electrode bulbs, pads, groundings

At other worksites

art supplies carpet backing Personal Protective Equipment:
bandages rubber bands • aprons
erasers rubber gaskets • boots
rubber mats rubber stamps • gloves
tires, tubes rubber gloves • respirators

At home and in the community

baby bottle nipples balloons, balls, toys

condoms/diaphragms crutches—underarm pads

diapers and grips exercise stretch band elastic in clothing

incontinence pads foam rubber lining on splints

soothers rubber pants wheelchair cushions teething rings

food touched by natural rubber handles on sports racquets/tools

latex gloves

What if I must wear personal protective equipment like gloves?

Personal protective equipment (such as gloves) may be required to be used to protect workers from biological or chemical hazards. Many gloves are made of natural rubber latex. Other protective equipment such as respirators, aprons, and boots may also contain natural rubber latex. If possible, choose personal protective equipment, like gloves, that is free of natural rubber latex.

In some cases, however, it may not be possible to use a product that is not made from natural rubber latex and still obtain the same degree of protection from the hazard. When natural rubber latex products must be used, obtain information from manufacturers on the protein content of their products, and choose a product with a low protein content.

Powderless, low-protein natural rubber latex gloves are available, but are *not* suitable for workers with a *confirmed* natural rubber latex protein allergy. These workers should only use gloves that are not made from natural rubber latex. The use of powderless, low protein natural rubber latex gloves by co-workers, however, may reduce airborne protein levels enough to allow a sensitized worker to continue working in the same area. It will also help prevent other workers from developing the natural rubber latex protein allergy.

Some gloves may be marketed as "hypoallergenic" (i.e., less likely to cause allergy)—this term was originally used to indicate that gloves may contain less chemical additives. Such gloves may therefore be suitable for workers with *allergic contact dermatitis* caused by the chemical additives. However, "hypoallergenic" does not necessarily mean that the gloves are free of natural rubber latex. As such, these gloves may *not* be suitable for those with a natural rubber latex protein allergy.

If gloves are labelled "non-latex" or "latex-free" they should not contain natural rubber latex proteins, but may contain chemical additives.

Manufacturers or suppliers of the gloves should be contacted to answer any questions on rubber chemical additives and natural rubber latex protein content.

How do I know if I am allergic to natural rubber latex proteins?

Your doctor may refer you to a specialist (such as an allergist or dermatologist). The specialist may test your sensitivity to natural rubber latex and make a diagnosis.

Is there a cure for natural rubber latex protein allergy?

Currently, there is no "cure" for a natural rubber latex protein allergy. Once you develop this condition, the concern is that the reactions may become more severe after each exposure, or that you may react to lower and lower exposures. It is also possible to have a severe reaction the very first time you are re-exposed, even if the exposure is minimal.

What can I do if I have a natural rubber latex protein allergy?

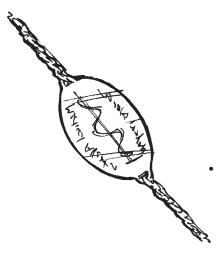
If you do develop a natural rubber latex protein allergy, you must avoid natural rubber latex as much as possible, both at work and away from work. Seek advice and information from your specialist or family doctor. Controlling symptoms with medications while continuing to be exposed may increase sensitivity while simply masking the severity of reactions. The following are ways to cope with this allergy:

- Inform your employer (with a note from your doctor) that you must avoid exposure to natural rubber latex. Work with your employer to achieve this—ask for assistance in identifying and modifying your risk. Your employer must investigate the situation, and take corrective action.
- Contact your company's occupational health and safety department
 or health nurse, if there is one. Work with purchasing personnel
 to determine if natural rubber latex products can be eliminated or
 substituted with products that do not contain natural rubber latex.
- Consider informing the workplace first aid attendants about your natural rubber latex protein allergy. While your exact medical diagnosis is your personal information, you may choose to tell them

that you have this allergy, as this will help them provide you with appropriate first aid if you have an allergic reaction at work. This is particularly important it you suffer from anaphylaxis.

- Avoid exposure to natural rubber latex products at all times. Directly contact only products free of natural rubber latex and work in an area free of airborne glove powder from natural rubber latex gloves. Low-protein, powderless natural rubber latex gloves are not suitable for workers with a natural rubber latex protein allergy. However, if co-workers use such gloves, it may reduce the airborne protein levels enough to allow the sensitized worker to continue working in the same area. General use of these gloves may also help prevent others from developing this condition. A list of products containing natural rubber latex and their alternatives should be made available to workers by their employer.
- If you have been diagnosed by your doctor as having a natural rubber latex protein allergy, inform other medical practitioners (including dentists) of your allergy before you are examined or treated. This will help ensure that they use products that do not contain—or have a minimum amount of—natural rubber latex. Scheduling your appointments first thing in the day may minimize exposure to airborne protein from natural rubber latex glove powder. Further precautions will be necessary if you require surgery or hospitalization.
- Wear a Medic-Alert bracelet that identifies the natural rubber latex protein allergy, and discuss with your doctor the need to carry an allergy kit (e.g. Epipen®, Ana-kit®) for use in case of an emergency. Learn how to use the kit.
- When travelling to areas where medical supplies are limited, carry
 with you a variety of sizes of gloves that are not made from natural
 rubber latex, in case you need emergency medical or dental work.
- Avoid certain foods to which people with natural rubber latex protein allergy also tend to be allergic (for example, bananas, avocados, chestnuts, and kiwi).

Research on "latex allergies" is ongoing. At the time of publication, this booklet reflected generally accepted findings on "latex allergies."



"Latex allergies" resources

• American Latex Allergy Association, A.L.E.R.T., Inc.

3791 Sherman Road Slinger WI 53086 888 97-ALERT / 888 972-5378 262 677-2808 (fax) www.latexallergyresources.org

Canadian Centre for Occupational Health and Safety

135 Hunter Street East Hamilton ON L8N 1M5 800 263-8466 www.ccohs.ca

• Government of Saskatchewan, Department of Labour

Regina Office Saskatoon Office 400 – 1870 Albert Street 122 – 3rd Avenue, N. Regina SK S4P 4W1 Saskatoon SK S7K 2H6

800 567-7233 800 667-5023 306 787-4496 306 787-4496

www.labour.gov.sk.ca/safety/latex/

National Institute for Safety and Health (NIOSH)

Centers for Disease Control and Prevention (CDC) Hubert H. Humphrey Building

200 Independence Avenue, S.W.

Washington DC 20201

800 35-NIOSH / 800 356-4674

www.cdc.gov/niosh/topics/latex/

Occupational Health and Safety Agency for Healthcare (OHSAH) in BC

Suite 301 – 1195 West Broadway

Vancouver BC V6H 3X5

800 356-6612

778 328-8000

www.ohsah.bc.ca

• Occupational Safety and Health Administration (OSHA)

U.S. Department of Labour
OSHA Coordinator for International Affairs
200 Constitution Avenue
Washington DC 20210
800 321-OSHA / 800 321-6742
www.osha-slc.gov/SLTC/latexallergy/index.html

WorkSafeBC

Workers' Compensation Board of BC PO Box 2310 Stn Terminal Vancouver BC V6B 3W5 888 621-7233 604 276-3100 www.worksafebc.com

WorkSafeBC Offices

Visit our web site at <www.worksafebc.com>.

Abbotsford

2774 Trethewey Street V2T 3R1 Phone 604 276-3100 1 800 292-2219 Fax 604 556-2077

Burnaby

450 – 6450 Roberts Street V5G 4E1 Phone 604 276-3100 1 888 621-7233 Fax 604 232-5950

Coquitlam

104 – 3020 Lincoln Avenue V3B 6B4 Phone 604 276-3100 1 888 967-5377 Fax 604 232-1946

Courtenay

801 30th Street V9N 8G6 Phone 250 334-8765 1 800 663-7921 Fax 250 334-8757

Kamloops

321 Battle Street V2C 6P1 Phone 250 371-6003 1 800 663-3935 Fax 250 371-6031

Kelowna

110 – 2045 Enterprise Way V1Y 9T5 Phone 250 717-4313 1 888 922-4466 Fax 250 717-4380

Nanaimo

4980 Wills Road V9T 6C6 Phone 250 751-8040 1 800 663-7382 Fax 250 751-8046

Nelson

524 Kootenay Street V1L 6B4 Phone 250 352-2824 1 800 663-4962 Fax 250 352-1816

North Vancouver

400 – 224 Esplanade Ave. W. V7M 1A4 Phone 604 276-3100 1 888 875-6999 Fax 604 232-1558

Prince George

1066 Vancouver Street V2L 5M4 Phone 250 561-3700 1 800 663-6623 Fax 250 561-3710

Surrey

100 – 5500 152 Street V3S 5J9 Phone 604 276-3100 1 888 621-7233 Fax 604 232-7077

Terrace

4450 Lakelse Avenue V8G 1P2 Phone 250 615-6605 1 800 663-3871 Fax 250 615-6633

Victoria

4514 Chatterton Way V8X 5H2 Phone 250 881-3418 1 800 663-7593 Fax 250 881-3482

Head Office / Richmond

Prevention Information Line:
Phone 604 276-3100
1 888 621-7233 (621-SAFE)
Administration:
6951 Westminster Highway
Phone 604 273-2266
Mailing Address:

PO Box 5350 Stn Terminal Vancouver BC V6B 5L5

After Hours

Health & Safety Emergency 604 273-7711

1 866 922-4357 (WCB-HELP)